

CLAIMS

What is claimed is:

1 1. A method for preparing a rubber modified asphalt, said method comprising the
2 steps of:

3
4 a. combining i) asphalt, ii) rubber or RPVR and iii) at least one dodecyl or
5 tridecylbenzene sulfonic acid; and

6
7 b. heating and/or mixing the components combined in Step A to form a
8 rubber modified asphalt.

1 2. A method according to Claim 1 wherein the dodecyl or tridecylbenzene sulfonic
2 acid is linear.

1 3. A method according to Claim 1 wherein the dodecyl or tridecylbenzene sulfonic
2 acid is branched.

1 4. A method according to Claim 1 wherein Step B comprises applying moderate
2 heat.

1 5. A method according to Claim 1 wherein the components are heated to a
2 temperature in the range of about 225° to about 450° F during Step B.

1 6. A method according to Claim 5 wherein the temperature during Step B is about
2 350° F.

1 7. A method according to Claim 1 wherein the in the at least one dodecyl or
2 tridecylbenzene sulfonic acid comprises DDBSA.

1 8. A method according to Claim 1 wherein Step A comprises initially combining
2 asphalt at least one dodecyl or tridecylbenzene sulfonic acid with heat and/or mixing

and then subsequently adding rubber or RPVR to the mixture.

9. A method according to Claim 1 wherein Step A comprises combining asphalt, crumb rubber and at least one dodecyl or tridecylbenzene sulfonic acid.

10. A method according to Claim 9 wherein the crumb rubber will pass through a #9 U.S. series sieve.

11. A composition comprised of an asphalt, RVPR and at least one dodecyl or tridecylbenzene sulfonic acid (SA).

12. A composition according to Claim 11 where, based on weight, the asphalt is from about 65 to about 98 percent, the RVPR is from about 1 to about 25 percent, and the SA is from about 1 to about 10 percent.

13. A composition according to Claim 11 where the RVPR is at least minus 4 mesh.

14. A composition according to Claim 11 where the SA is a BAS or a LAS.

15. A composition according to Claim 11 where the SA is DDBSA.

16. A composition according to Claim 11 further comprising aggregate or an aggregate containing composition.

17. A method for making RMAC comprising combining at least one of (1) asphalt and RVPR, or (2) a blended mixture of asphalt and RVPR, with at least one dodecyl or tridecylbenzene sulfonic acid (SA) in the presence of moderate heat for an amount of time sufficient to cause at least one of (1) an increase in hardness (2) an increase in softening point, or (3) an improvement in recovery from deformation, in the resulting admixture of RMAC.

- 1 18. A method according to Claim 17 wherein the SA is a BAS or a LAS.
- 1 19. A method according to Claim 17 wherein the SA is DDBSA.
- 1 20. A method according to Claim 17 wherein the unblended RVPR has a mass
2 of about minus 4 or less.
- 1 21. A method according to Claim 17 wherein the asphalt-RVPR-SA mixture is
2 heated at about 225° to about 450° F. (ca. 107° C. to about 232° C.).
- 1 22. A method according to Claim 17 wherein the asphalt-RVPR-SA mixture is
2 heated to about 350° F.
- 1 23. A method according to Claim 17 wherein the asphalt-RVPR-SA mixture is
2 heated for about 1 - 2 hours.
- 1 24. A method according to Claim 17 wherein the asphalt-RVPR-SA mixture is
2 stirred while being heated.
- 1 25. A method for improving at least one of (1) the softening point, (2) the
2 hardness, or (3) the recovery from deformation of a RMAC composition comprising
3 adding at least one dodecyl or tridecylbenzene sulfonic acid (SA), in the amount of
4 from about 1 to about 10 percent, W/W, to the RMAC in the presence of moderate
5 heat for about 1 - 4 hours.
- 1 26. A method according to Claim 25 wherein the moderate heat comprises
2 temperatures of about 2250 to about 4500 F.
- 1 27. An RMAC composition made by the method of Claim 25.
- 1 28. An RMAC composition made by the method of Claim 26.